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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,117	12/15/2003	Daniel Yellin	MP1493 151668	4852

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SCHWABE, WILLIAMSON & WYATT, P.C.
PACWEST CENTER, SUITE 1900
1211 S.W. FIFTH AVENUE
PORTLAND, OR 97204

EXAMINER	
AGHDAM, FRESHTEH N	

ART UNIT	PAPER NUMBER
2611	

MAIL DATE	DELIVERY MODE
09/02/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/734,117	YELLIN ET AL.	
	Examiner	Art Unit	
	FRESHTEH N. AGHDAM	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *26,34 and 35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *26 and 34-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed June 16, 2009 have been fully considered but they are not persuasive.

Applicant's Argument(s):

Regarding claims 26, 34, and 35, pages 4-5, the applicant argues "It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known... Specifically, Applicants respectfully submit that in order for the rejection to be proper, the Examiner must, at the very least, show how that use of Vilcocq's criteria in an unintended manner (that is to say in the manner as claimed in amended claim 26) would result in computational simplicity, and that such criteria are even suitable for use in the unintended manner."

Examiner's Response:

Examiner disagrees with the Applicant because prior art is not limited just to the references being applied, but includes the understanding of one of ordinary skill in the art. The prior art reference (or references when combined) need not teach or suggest all the claim limitations, however, Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art. **The "mere existence of differences between the prior art and an invention does not establish the invention's nonobviousness." Dann v. Johnston, 425 U.S. 219, 230, 189 USPQ 257, 261 (1976). The gap between the prior**

art and the claimed invention may not be "so great as to render the [claim] nonobvious to one reasonably skilled in the art."Id . In determining obviousness, neither the particular motivation to make the claimed invention nor the problem the inventor is solving controls. The proper analysis is whether the claimed invention would have been obvious to one of ordinary skill in the art after consideration of all the facts. See 35 U.S.C. 103(a). Factors other than the disclosures of the cited prior art may provide a basis for concluding that it would have been obvious to one of ordinary skill in the art to bridge the gap. The rationales discussed below outline reasoning that may be applied to find obviousness in
such cases.

The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that "[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" KSR, 550 U.S. at ___, 82 USPQ2d at 1396. The

If an applicant disagrees with any factual findings by the Office, an effective traverse of a rejection based wholly or partially on such findings must include a reasoned statement explaining why the applicant believes the Office has erred substantively as to the factual findings. A mere statement or argument

that the Office has not established a prima facie case of obviousness or that the Office's reliance on common knowledge is unsupported by documentary evidence will not be considered substantively adequate to rebut the rejection or an effective traverse of the rejection under 37 CFR 1.111(b). Office personnel addressing this situation may repeat the rejection made in the prior Office action and make the next Office action final. See MPEP § 706.07(a).

Examiner would like to direct the applicant's attention to the fact that **the most important aspect of the claimed invention is the fact that the coefficients of the pre-emphasis filter is adaptive rather than predetermined**, which this feature is taught by Vilcocq and the only difference between the claimed invention and the prior art is that optimization criteria are related to the input to the VCO but Vilcocq teaches the optimization criteria are related to the output to the VCO. One of ordinary skill in the art would readily recognize that it is obvious and/or a matter of design choice for the coefficients of the pre-emphasis filter to be obtained from the input to the VCO rather than the output to the VCO, wherein when the optimization criteria are based on the output to the VCO then the optimization process would be more accurate than when only the input to the VCO is considered. On the other hand, when the optimization criteria are based on only the input to the VCO then hardware complexity is reduced due to computational simplicity.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 26 and 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindoff et al (US 6,101,224), further in view of Vilcocq et al (US 2004/0041638) and Hasson (US 2003/0123566).

As to claim 26, Lindoff discloses a communication device comprising: inherently an antenna (fig. 1A); inherently a baseband processor (col. 1, lines 38-4258-61; col. 4, lines 9-45); a power amplifier coupled to said antenna (means 306), the power amplifier being configured to receive a first output of said baseband processor from a signal path that includes a fractional-N-sigma-delta modulator (col. 3, lines 27-45) to receive a second output of the baseband processor, and to amplify the first output with a gain that is controlled by a varying amplitude of the second output (means 303 and 307). Lindoff does not expressly disclose that the fractional-N-sigma-delta modulator includes a pre-emphasis filter and the antenna is a dipole antenna. Vilcocq discloses a fractional-N-sigma-delta modulator that includes an adaptive pre-emphasis filter (fig. 2, means 18) in order to adjust the digital values to compensate at least for variations in voltage, temperature, and/ or aging (par. 38-39). Vilcocq further discloses a fractional-N-sigma-delta modulator including a sigma-delta converter (means 15); and a fractional-N phase locked loop unit coupled to the output of said sigma-delta converter (means 11-14), wherein the transfer function of said pre-emphasis filter is optimized according to

predefined optimization criteria (Par. 8-13 and 54-55), wherein the optimization criteria are related to an input to the filter and an output to the voltage controlled oscillator (Par. 12-13). One of ordinary skill in the art would readily recognize that it is obvious and/or a matter of design choice for the adaptive coefficients of the pre-emphasis filter to be obtained from the input to the VCO rather than the output to the VCO, wherein when the optimization criteria are based on the output to the VCO then the optimization process would be more accurate than when only the input to the VCO is considered. On the other hand, when the optimization criteria are based on only the input to the VCO then hardware complexity is reduced due to computational simplicity. Therefore, it would have been obvious to one of ordinary skill in the art to improve the system performance of the digital synthesizer by adapting the transfer function of the pre-emphasis filter to the linearized response of the phase locked loop variations for the reason stated above. Hasson discloses a communication device that utilizes a diploe antenna (fig. 1, means 108; claim 6); a power amplifier coupled to the antenna (means 106); and a sigma-delta modulator coupled to the power amplifier (means 102). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Hasson with Lindoff and Vilcocq in order to transmit the modulated signal via a dipole antenna since dipole antennas show high antenna efficiency and integration flexibility.

As to claim 34, one of ordinary skill in the art would recognize that it is well known and/or a matter of design choice since the pre-emphasis filter can be an FIR or IIR filter, wherein the FIR transfer function is more preferred comparing to an IIR transfer function filter since the filter utilizing the FIR transfer function is implemented in

a Read Only Memory; and also, the FIR filter is more stable and have linear phase response. On the other hand, IIR filters utilize less number of taps than FIR filters. Therefore, it would have been obvious to select an FIR filter to serve as the pre-emphasis filter for the reasons stated above.

As to claim 35, Vilcocq further discloses that determining the transfer function includes determining the transfer function that is optimized according to the predefined optimization criteria that includes a mean squared error of an input to the filter and an output to the voltage controlled oscillator (Par. 12-13). One of ordinary skill in the art would readily recognize that it is obvious and/or a matter of design choice for the coefficient adaptation of the pre-emphasis filter to be obtained from the input to the VCO rather than the output of the VCO, as taught by Vilcocq, wherein when the optimization criteria is based on the output of the VCO then the optimization process would be more accurate than when only the input to the VCO is considered for adapting the coefficients of the pre-emphasis filter. But on the other hand, when the optimization criteria is based on only the input to the VCO then the hardware complexity is reduced due to computation simplicity. Therefore, it would have been obvious to one of ordinary skill in the art to improve the system performance of the digital synthesizer by adapting the transfer function of the pre-emphasis filter to the linearized response of the phase locked loop variations for the reason stated above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRESHTEH N. AGHDAM whose telephone number is (571)272-6037. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

//F. N. A./

Examiner, Art Unit 2611

/Chieh M Fan/

Supervisory Patent Examiner, Art Unit 2611